PTO 08-3814

CC=FR
DATE=20040730
KIND=A1
PN=2850273

EXTRACT OF CASTANEA SATIVA BUDS
[EXTRAIT DE BOURGEONS DE CASTANEA SATIVA]

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UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. APRIL 2008
TRANSLATED BY: SCHREIBER TRANSLATION,INC.

PUBLICATION COUNTRY	(10):	FR
DOCUMENT NUMBER	(11):	2850273
DOCUMENT KIND	(12):	A1
PUBLICATION DATE	(43):	20040730
APPLICATION NUMBER	(21):	0300845
APPLICATION DATE	(22):	20030127
INTERNATIONAL CLASSIFICATION	(51):	Int Cl7 : A61 K 7/48
PRIORITY COUNTRY	(33):	
PRIORITY NUMBER	(31):	
PRIORITY DATE	(32):	
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DESIGNATED CONTRACTING STATES	(81):	
TITLE	(54):	Extract of Castanea sativa buds
FOREIGN TITLE	[54A]:	Extrait de bourgeons de Castanea sativa

Extract of Castanea sativa buds

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The invention concerns an extract of Castanea sativa buds. It also has the goal of a cosmetic compound that includes the said extract. And finally, it pertains to a certain number of cosmetic uses, by topical application, of the extract and therefore of the compound of the invention.

Native of southern Europe and south-west Asia, Castanea sativa is a species of the Fagaceae family. This tree, which can reach 30 m height, is very widely distributed and inhabits centuries old in regions with sandy or silico-argillaceous soils. There are several hundreds of varieties that are derived from crops of the lumber industry or the production of chestnuts.

To the knowledge of the applicant chestnuts are used in different forms in the cosmetic field. In the form of flour it is used as an anti-aging agent (see DE 4,107,122 for example) or as a flotation agent component (JP 917593). Chestnut bark has been described for its protective effect (see, for example, KR 00253843), and also as a capillary agent (JP 8217641). The document JP 10226633 describes the use of chestnut bark and skin for its action as a whitening agent and anti-free radicals. Finally, chestnut is described in the document JP 2000154121 in a

[1] Numbers in the margin indicate pagination in the foreign text.

capillary compound in the presence of other extracts such as Japanese Cedar.

The applicant has found that other parts of this tree, the leaves, the wood, the bark and especially the buds in particular, have beneficial properties, in the field of cosmetics in particular, by means of topical application. In the following description, the invention is more particularly described in relation to the buds. However, the same conditions of extraction and the same properties described subsequently apply to the leaves, wood and bark. /2

In other words, and according to an initial feature, the invention concerns an extract of Castanea sativa buds that is capable of being obtained by a first stage of solid/liquid extraction followed by a second stage of solid/liquid separation, and then by a third stage of recovery of the liquid phase.

According to an initial characteristic the solid/liquid extraction can be carried out by different techniques that are well known by a person of the art, such as maceration, re-maceration, digestion, dynamic maceration, fluid bed extraction, microwave assisted extraction, ultrasound assisted extraction, counter current extraction, percolation, re-percolation, lixiviation, extraction under reduced pressure, diacolation, extraction using a supercritical fluid, solid/liquid extraction under continuous reflux (Soxhlet). In one mode of advantageous

implementation the extraction is carried out by hot dynamic maceration.

According to another characteristic the solid/liquid extraction is carried out from buds in fresh and dry form and in fresh form treated with microwaves, or fresh form treated with microwaves and then dried, the buds capable of being present in addition in whole, pulverized, or cryogenically pulverized form.

In addition, the extraction solvent corresponding to the liquid phase is an organic solvent that can be used in a topical cosmetic application. The extraction solvent is chosen from the group that includes water, alcohols (ethanol, methanol, and so forth), glycols (such as propylene glycol, butylenes glycol, glycerin …), alone or in mixtures.

In practice, the bud/solvent ratio, during the extraction stage, is between 1/99 and 80/20 (by weight). Also, the extraction is carried out at a temperature between 3 and 100%, preferably between 20 and 60%, for a few minutes to several days, as a function of the extraction method used.

In order to optimize the extraction of active compounds while protecting these compounds from oxidation by oxygen in the air, the solid/liquid extraction stage can be carried out with stirring and under an atmosphere of nitrogen. /3

According to the invention the solid/liquid extraction is followed by a stage of solid/liquid separation, the goal being to

recover the liquid phase that contains the active material. This separation can be carried out by any technique known to a person of the art, draining, pressing, drying, centrifuging, or filtering in particular.

In one mode of advantageous implementation the liquid/solid separation stage is followed by at least one stage of clarification. This clarification stage can be carried out by filtering on plates, membrane filtering, tangential filtering, or even by centrifuging.

According to another mode of implementation the liquid/solid separation stage is followed by a concentration stage that allows one to obtain a concentrated liquid form. In practice, the concentration stage is carried out by evaporation under vacuum or reverse osmosis. Of course, the concentration stage can be carried out directly after the separation or clarification stage.

Following the solid/liquid separation stage and in another mode of implementation, the resulting extract is fractionated, enriched or purified by different techniques such as membrane filtering, liquid/liquid extraction or preparative chromatography.

Finally, for the purpose of sterile or non-sterile packaging, the clarification and/or concentration stages can be followed by a 0.22 micrometer sterilizing filtration stage.

As already mentioned, at the end of the separation stage, one recovers an extract in liquid form. In order to obtain a liquid extract that is stable over time in terms of bacterial contamination, physico-chemical stability and color and in the case of non-sterile packaging, one incorporates in the liquid phase, if necessary before the stage of sterilizing filtration, at least one preservative (Phenonip®, for example) in a concentration between 1 and 10 g/l and an anti-oxidizing agent (organic acids for example: ascorbic, citric, …) in a concentration between 0.5 and 10 g/l with respect to the total volume of the liquid phase. /4

In order to obtain an extract in dry form, the extract obtained at the end of the liquid/solid separation stage, or the clarification and/or concentration stage if necessary, is dried with or without preservative and with or without texturizing agent (such as starch, malt-dextrin, glucose syrups, …), by lyophilization, atomization or evaporation under vacuum.

According to another characteristic, when the extract is present in liquid form, it has a dry material content between 1 and 100 g/kg. When it is present in dry form it has a dry material content between 10 and 1000 g/kg.

The extract can be used in the field of cosmetics, in particular when it is applied topically. Thus, the applicant has found that the extract of the invention:

- Stimulates the synthesis of essential ingredients of the extra-cellular matrix through the cells of the dermis, such as elastin, collagen, and hyaluronic acid;
- Has a cyto-protective activity vis-à-vis the skin.

In other words and according to another aspect of the invention, the previously described extract can be used in these applications.

In another aspect, the invention concerns a cosmetic compound that includes an extract of leaves, tree bark or buds of Castanea sativa, an extract of buds in particular obtained by the previously described method.

In practice the extract represents between 0.1% and 10% by weight of the compound, preferably between 0.3% and 3%. /5

The invention and the advantages derived from it will be clearly apparent from the following example of its implementation.

EXAMPLE 1: Fabrication of an extract of Castanea sativa buds

- Blend 473.7 g of butylenes glycol and 426.3 g of purified water in a single beaker;
- Heat with solvent at 40°C with continuous stirring;
- Weigh out 100 g of frozen Castanea sativa buds;
- Crush the buds for a few seconds with the help of a knife mill;

- Add the crushed buds to the water/butylenes glycol mixture;
- Let the extraction take place for about 8 hours at 40°C with continuous stirring;
- Remove the buds by passing them over a nylon cloth (100 micrometers);
- Clarify the extract on paper filters of decreasing porosity.

EXAMPLE 2: Cosmetic compound

Cosmetic compound

Essential care of the face

Tribehenin PEG-20 ester	Oil and water emulsifier	6.00
Octyldodecyl Myristate	Emollient	15.00
Phenoxy ethanol and methylparaben and butylparaben and ethylparaben and propylparaben	Preservative	0.50
Extract of Castanea sativa buds		3.00
Perfume		0.20
Water		qsp 100

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CLAIMS

1. Extract of Castanea sativa buds that can be obtained by a first stage of solid/liquid extraction followed by a second stage of solid/liquid separation and finally by a third stage of recovery of the liquid phase.

2. Extract according to claim 1 characterized in that the solid/liquid extraction is carried out by maceration, re-maceration, digestion, dynamic maceration, fluid bed extraction, microwave assisted extraction, ultrasound assisted extraction, counter current extraction, percolation, re-percolation, lixiviation, extraction under reduced pressure, diacolation, extraction by supercritical fluid, or solid-liquid extraction with continuous reflux.

3. Extract according to claim 1 characterized in that the bud/solvent ratio during the solid/liquid extraction stage is between 1/99 and 80/20 (by weight).

4. Extract according to claim 1 characterized in that the solid/liquid extraction is carried out at temperature between 3 and 100°C, preferably between 20 and 60°C.

5. Extract according to claim 1 characterized in that the solid/liquid separation stage is carried out by draining, pressing, drying, centrifuging or filtering.

6. Extract according to claim 1 characterized in that the liquid/solid separation stage is followed by at least one clarification stage.

7. Extract according to claim 1 characterized in that the liquid/solid separation stage is followed by a concentration stage. /7

8. Extract according to claims 6 or 7 characterized in that the stages of clarification and/or concentration are followed by a stage of sterilizing filtration at 0.22 micrometers.

9. Extract according to claim 1 characterized in that it is dried at the end of the liquid/solid separation stage by lyophilization, atomization or evaporation under vacuum.

10. Extract according to claim 1 characterized in that when the extract is present in liquid form it has a dry material content between 1 and 100 g/kg.

11. Extract according to claim 1 characterized in that when it is present in dry form it has a dry material content between 10 and 1000 g/kg.

12. Extract according to claim 1 used to stimulate the synthesis of the essential ingredients of the extra-cellular matrix by the cells of the dermis.

13. Extract according to claim 1 used for its cyto-protective active vis-à-vis the skin.

14. Cosmetic compound that includes an extract of Castanea sativa buds according to claim 1.

15. Compound according to claim 14 characterized in that the extract represents between 0.1% and 10% by weight of the compound, preferably between 0.3% and 3%.